



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,597	11/10/2003	Anand Anandakumar	JA03-001	6241
28112	7590	06/23/2006	EXAMINER	
GEORGE O. SAILE & ASSOCIATES 28 DAVIS AVENUE POUGHKEEPSIE, NY 12603			CHAUDRY, MUJTABA M	
			ART UNIT	PAPER NUMBER
			2133	

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/705,597	Applicant(s) ANANDAKUMAR, ANAND	
	Examiner Mujtaba K. Chaudry	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-39 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>6/19/2006</u> |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

An attempt for provisional restriction requirement was made on Monday, June 19, 2006 with Applicant's Attorney, George O. Saile. A connection was not made. Applicants are advised to elect the claims in one of the following groups below and cancel remaining non-elected claims in subsequent communication.

Restrictions to one of the following inventions is required under 35 USC 121:

- I. Claims 1-5 drawn to a decoding system in a communication system comprising a first and second decoder using soft-input information, classified in class 714, subclass 780.
- II. Claims 6-16 drawn to an apparatus for iteratively decoding data in a communication system with computation of forward and backward metrics, classified in class 714, subclass 796.
- III. Claims 17-24, drawn to a soft-input soft-output (SISO) decoding method having first and second multiplexing means, classified in class 714, subclass 791.
- IV. Claims 25-39, drawn to a method for decoding data using trellis diagram in communication system, classified in class 714, subclass 792.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I, a decoding system in a communication system comprising a first and second decoder using soft-input information and Group II, an apparatus for iteratively decoding data in a communication system with computation of forward and backward metrics are related as combination and subcombination. Inventions in this relationship are distinct if it can be

shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the claims of Group I do not require the limitations of iteratively decoding data with computation of forward and backward metrics. The subcombination has separate utility such as in a single networked environment.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

Inventions Group I, a decoding system in a communication system comprising a first and second decoder using soft-input information and Group III, a soft-input soft-output (SISO) decoding method having first and second multiplexing means are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the claims of Group I do not require the limitations of a soft-input soft-output (SISO) decoding method having first and second multiplexing means. The subcombination has separate utility such as in a single networked environment.

Because these inventions are distinct for the reasons given above and the search required for Group III is not required for Group I, restriction for examination purposes as indicated is proper.

Inventions Group I, a decoding system in a communication system comprising a first and second decoder using soft-input information and Group IV, a method for decoding data using trellis diagram are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the claims of Group I do not require the limitations of a method for decoding data using trellis diagram. The subcombination has separate utility such as in a single networked environment.

Because these inventions are distinct for the reasons given above and the search required for Group IV is not required for Group I, restriction for examination purposes as indicated is proper.

Inventions Group II, an apparatus for iteratively decoding data in a communication system with computation of forward and backward metrics Group III, a soft-input soft-output (SISO) decoding method having first and second multiplexing means are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the

particulars of the subcombination as claimed because the claims of Group II do not require the limitations of a soft-input soft-output (SISO) decoding method having first and second multiplexing means. The subcombination has separate utility such as in a single networked environment.

Because these inventions are distinct for the reasons given above and the search required for Group III is not required for Group II, restriction for examination purposes as indicated is proper.

Inventions Group II, an apparatus for iteratively decoding data in a communication system with computation of forward and backward metrics Group IV, a method for decoding data using trellis diagram are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the claims of Group II do not require the limitations of a method for decoding data using trellis diagram. The subcombination has separate utility such as in a single networked environment.

Because these inventions are distinct for the reasons given above and the search required for Group IV is not required for Group II, restriction for examination purposes as indicated is proper.

Inventions Group III, a soft-input soft-output (SISO) decoding method having first and second multiplexing means Group IV, a method for decoding data using trellis diagram are

Art Unit: 2133

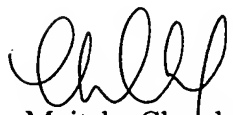
related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the claims of Group III do not require the limitations of a method for decoding data using trellis diagram. The subcombination has separate utility such as in a single networked environment.

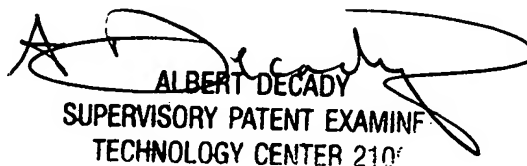
Because these inventions are distinct for the reasons given above and the search required for Group IV is not required for Group III, restriction for examination purposes as indicated is proper.

Conclusion

Any inquiries concerning this communication should be directed to the examiner, Mujtaba Chaudry who may be reached at 571-272-3817. The examiner may normally be reached Mon – Thur 6:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Albert DeCady at 571-272-3819.


Mujtaba Chaudry
Art Unit 2133
June 19, 2006


ALBERT DECADY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2101